

4-1975

The Effects of Locus of Control on Performance in Self-Directed Study

Jane Vaughn

Follow this and additional works at: <http://digitalcommons.wku.edu/theses>



Part of the [Education Commons](#), and the [Psychology Commons](#)

Recommended Citation

Vaughn, Jane, "The Effects of Locus of Control on Performance in Self-Directed Study" (1975). *Masters Theses & Specialist Projects*. Paper 1834.
<http://digitalcommons.wku.edu/theses/1834>

This Thesis is brought to you for free and open access by TopSCHOLAR®. It has been accepted for inclusion in Masters Theses & Specialist Projects by an authorized administrator of TopSCHOLAR®. For more information, please contact topscholar@wku.edu.

THE EFFECTS OF LOCUS OF CONTROL ON PERFORMANCE
IN
SELF-DIRECTED STUDY

A Thesis
Presented to
the Faculty of the Department of Psychology
Western Kentucky University
Bowling Green, Kentucky

In Partial Fulfillment
of the Requirements for the Degree
Master of Arts

by
M. Jane Vaughn
April 1975

THE EFFECTS OF LOCUS OF CONTROL ON PERFORMANCE
IN
SELF-DIRECTED STUDY

Recommended 4-29-75
(Date)

Carl R. Martiny
Director of Thesis

Samuel H. Farland

Gray m. m. m.

Approved May 5, 1975
(Date)

Edmund Gray
Dean of the Graduate College

Table of Contents

List of Tables.....	v
List of Figures.....	vi
Acknowledgements.....	vii
Abstract.....	viii
Introduction.....	1
Review of the Literature.....	4
Locus of Control and Subject Behavior.....	6
Academic Performance.....	8
Method.....	13
Subjects.....	13
Instrument.....	13
Class Procedure.....	13
Data Analysis.....	14
Results and Discussion.....	15
References.....	20
Appendix.....	24

List of Tables

Table

Page

1. 2 x 2 Table for the Median Test

16

List of Figures

Figure	Page
1. Assessed Progress of Internals and Externals at Week Intervals	17

Acknowledgements

To four beautiful people
because you cared
each in your own special way
my thesis has become a reality,
Carl, Leroy, Jim, and Mother
I love you.

To Sam and everyone else
who did so much to help
complete this project,
my thanks.

THE EFFECTS OF LOCUS OF CONTROL ON PERFORMANCE

IN

SELF-DIRECTED STUDY

M. Jane Vaughn

April 1975

28 pages

Directed by: Carl Martray, Leroy Metze, Sam McFarland

Department of Psychology

Western Kentucky University

A sample was taken from a self-directed statistics/experimental psychology class to investigate the relationship between locus of control orientation of the students and their academic performance. Self-directed study was defined as student oriented learning with few lectures and the use of contingency points (points earned for work completed) as reinforcement for completing work packets and projects. (The null hypothesis was that there is no relationship between grades and locus of control in the self-directed class.) It was found that internals progress through a self-directed class setting at a significantly faster rate than do externals.

Introduction

Following exhaustive analyses of previous research on the relative effectiveness of differing factors, methodologies, technologies, and procedures used in teaching, Stephens (1967) came to the conclusion that regardless of the approach, the same results were seemingly obtained. This spurred Stephens to propose his theory of spontaneous schooling which, briefly stated, urges the teacher to take into account his style and personality, along with those of his students, when selecting teaching strategies. Perhaps the lack of significance of the factors affecting teaching explored by Stephens (including individualized instruction, ability groups, discussion versus lecture, size of class and school, group-centered versus teacher-centered approaches, and programmed instruction) facilitated a theory (spontaneous schooling) which may have some far reaching implications. Personality characteristics of the learner may have significant influence upon performance, especially when associated with various teaching strategies or techniques. One such characteristic (personality variable) which one might expect to have some influence upon the teaching-learning process is that of learner locus of control. A review of current literature suggests that the locus of control variable may be of significant relevance

in regard to student academic performance.

Initial research concerning locus of control as conceptualized by Rotter (1954, 1960) explains that perception of reinforcement is perhaps a meaningful variable which may affect how an individual reacts to that reinforcement. As postulated by Rotter (1954), individuals that perceive reinforcement as being contingent upon their own behavior, rather than chance external factors, are more likely to continue that behavior in future similar situations. Conversely, individuals who perceive reinforcement as being outside their control will be less likely to continue the behavior. It would thus seem that the individual who perceives himself as being in control of the reinforcement that he receives would be more likely to engage in self-initiative type behavior in educational endeavors than would be the individual who perceives others as being in control of his reinforcement. Self-initiating type behavior would seem to be an asset to the student enrolled in the self-directed type class. Since self-directed study is one type of teaching strategy which seems to require self-initiative on the part of the student, a study involving this strategy in regard to the effects of the locus of control variable would seem profitable.

Although there are a number of strategies in regard to self-directed study, the Keller Plan (Keller, 1968) is one of the more frequently used methods. The self-directed class can be summarized as a class in which the student

works at his own speed, knows what is expected of him, knows where he stands in relation to other students, and can actively participate in the learning process instead of just attending lectures. The subject matter of a Keller type course is divided into small units, each consisting of objectives to be met, reading assignments, and a written test to be taken after the unit is completed. The teacher's role becomes that of managing the system through supervising activities and preparing study guides and unit tests well in advance. Proctors are desirable when available to assist the instructors in helping the students who are experiencing difficulties with the course material.

As the relationship of locus of control and academic performance has been established to some degree (Cronbach, 1975; Domino, 1968; Warehime, 1972), it seems reasonable to investigate it further. The present investigation will assess the possibility of a significant relationship between locus of control and self-initiated academic performance in the self-directed class setting.

Review of the Literature

Investigations of situations in which it was made clear to subjects that reinforcement has been contingent upon their behavior have been completed by James & Rotter (1958) and Fhares (1957). Both studies reported that reinforcement provided in those situations where it was clear that the individual's behavior affected whether he received reward or not had more effect upon his future expectancy for reward than in situations where reward was perceived as being influenced by chance. These findings led Rotter (1960) to conclude that his earlier hypothesis (individuals differed in their generalized expectancy of reinforcement) was accurate. He theorized that if a person believes that he is rewarded because of his own behavior, then positive reinforcement will strengthen potential for that behavior to recur in the same situation. Conversely, if a person perceives reinforcement to be outside of his control, then the preceding behavior is less likely to be strengthened. Hence, the rate of learning in situations where reinforcement is contingent upon the subject's behavior would differ from the rate of learning that is obtained under conditions that depend on luck or fate. It has been hypothesized that the individual's perception of what controls his reinforcement (himself vs. outside forces)

will determine how he will respond toward the reinforcement (Rotter, 1960). If the individual perceives that reinforcement is not under his control and is not a consequence of his own actions, he is described as falling at the external end of the dimension. If he perceives reinforcement as being a function of his behavior, he is referred to as being internally controlled.

Phares (1957) investigated individual differences in reference to the internal-external dimension and was able to obtain measurable deviations in his studies of expectancy changes in chance and skill situations. He constructed a Likert-type scale in which 13 items were stated so as to indicate internal control of reinforcement and 13 items external control of reinforcement. Phares concluded that subjects scoring high on the external items tended to behave in a manner that correlated with other high scoring external subjects. That is, the high externally oriented individuals tended to take fewer chances and showed more unusual shifts in their behavior than did those subjects who scored low on the external items.

James (cited in Rotter, 1966) constructed a lengthy revision of Phares' scale in which he added 26 items to the most successful items in the original scale. James found a significant correlation between his revised scale and the personal adjustment score of the Rotter Incomplete Sentence Blank (Rotter & Rafferty, 1950). This study also indicated that both externals and internals (those scoring

at either extreme of the distribution) seemed to be less adjusted than those individuals whose scores fell in the middle of the distribution.

The final revision of the James-Fhares scale was made by Rotter (1966) and is currently the most widely used scale for studying the internal-external control dimension. This revision of Rotter's scale, the I-E Scale, measures the subject's subjective appraisal about how reinforcement is controlled. This scale does not access individual preference for control.

Locus of Control and Subject Behavior

Ude and Vogler (1969) theorized that internals condition at a faster rate than do externals in tasks such as predicting light patterns from two flashing lights. Subjects received reinforcement for correctly predicting the flashing light sequence. For the first condition, the correct response depended upon the last flash presented in each trial. For the other condition, the correct response was contingent on the second to last flash. Although conditioning was in the predicted direction, the authors found no significant differences between internals and externals. They did note that externals tended to commit the gambler's fallacy (if a random sequence has deviated, a corrective bias in the other direction is expected) to a greater extent than did internals.

In reference to the locus of control variable, several motivational characteristics must be considered before

making accurate predictions of conditioning. Rotter (1966) and Lefcourt (1966) found externals to be more suggestible, conforming, and more yielding to outside forces for their reinforcement. Furthermore, other researchers (Hjelle and Clouser, 1970; Jones and Shrauger, 1968; Odell, 1959; Ryckman and Rodda, 1972) concluded that externals are more willing to yield to outside influences and forego control of the situation because they feel responsible to outside agents for their reinforcement. Conversely, internals exhibit more of a need to control environmental influences upon themselves than externals because they demand more control of the situation and direct their attention to the relevant aspects of the environment (Biondo and MacDonald, 1971).

Additional support for the conceptualization that internals need to control their environmental contingencies more than externals was provided by Julian and Katz (1968). The investigators had subjects participate in a competitive game in which there was an opportunity to rely on their own judgement, even though it always appeared that the opponent was doing better. The subjects were asked to predict the last number in a series of numbers with the option of referring to their opponent for assistance in making their decision. The instructions were manipulated to convince half the subjects that the task required skill while the other half were led to believe that their success depended upon chance. Regardless of the instructions and the fact

that the other person appeared to be winning, internals depended on their own intuition rather than on any assistance from their opponents when making their predictions. In a similar study, Julian and Katz (1968) further confirmed these findings.

Academic Performance

Several studies have attempted to relate the internal-external control variable with academic performance. Cardii (1962) found that university students who were failing academically tended to contribute their academic problems to external forces (luck, fate, or powerful others). Franklin (1963) examined reported evidence of achievement motivation in high school students. Achievement motivation was defined as early attempts to investigate colleges, the amount of time spent on homework assignments, parental interest and the intention of the student to go to college. He concluded that students scoring at the internal end of the distribution as measured by the I-E Scale tended to be more motivated toward further academic achievement than students scoring at the external end of the distribution. In a study of academic failure, Efram (1963) concluded that internals tended to "repress" or forget their academic failures more rapidly than externally oriented students. Efram theorized that the externally controlled student experienced less need to forget his failures. It is likely that he has already accepted environmental forces as the determining factors for his failures because they appear not

to threaten his self-esteem.

Warehime (1972) and Hjelle (1970) attempted to assess the effects of locus of control on academic performance of college students using grade point average as the dependent variable. Both researchers predicted that internally controlled college students would obtain higher quality point averages than their externally controlled counterparts. Results of both studies indicated only marginal support of their predictions.

Messer (1972) compared the grades of children who perceived their academic performance as contingent on their own efforts and abilities (internals) with those of children who viewed their school performance to be due to luck or the whims of others (externals). Internals were shown to have higher grades than externals when IQ and cognitive impulsiveness were statistically controlled. The results indicated that boys who took credit for their academic successes and girls who accepted blame for their failures were those most likely to have obtained higher grades.

Eilersen (1972) compared the relationship between students' locus of control orientation and their achievement and participation in either a structured or unstructured introductory psychology course. The author concluded that the students' I-E scores were not related to either achievement or participation in the traditionally structured class, however, internality was predictive of both high levels of achievement and participation in the

unstructured class. A study designed by White and Howard (1970) investigated the effects of control orientation upon two instructional methods in a general science class. The subjects, seventh grade boys, were divided into groups of internals and externals, with half of each group being subjected to one of the two instructional methods; either student-directed or teacher-directed learning. The results were not consistent with previous studies in that the investigators concluded that internal students learned the same under both teaching conditions; however, external students learned considerably more under the student-directed teaching conditions.

Using scores of Gough's California Personality Inventory, Domino (1968) investigated the relationship of college success to achievement via independence (Ai) and achievement via conformance (Ac). He concluded that high Ai students achieved poorly when in classes with instructors who dominated the class and pressed for conformity. He also found that the reverse relationship held true for high Ac students. Domino (1971) provided more evidence with a manipulative experiment in which he matched student style of learning (Ai or Ac) with instructor press (conformity or independence). He concluded that student success was much better when their style of learning was paired with the teacher's style of instruction. Majasan (cited in Cronbach, 1975) predicted that a student responding in a manner similar to the instructor would perform

best in his class. The criterion for student success was the student's total score over all of the course examinations, usually multiple-choice items provided by the textbook publisher. The author developed a short bipolar scale offering a behavioristic and humanistic alternative to each of the key beliefs that he felt were pertinent to the teaching of an introductory psychology class. Majasan concluded that students who in effect did agree on key matters with the instructor seemed to achieve at a higher degree than other non-agreeing students.

In summary, the research is very inconclusive, some indicating that internals condition at a faster rate than do externals, that externals are more suggestible, conforming and yield more readily to outside forces for reinforcement and that internals need to control their environmental contingencies more than externals. Few studies have associated self-directed study with the internal-external control dimension. Of those that have, some research indicated that internally controlled individuals experience considerable academic success and are achievement oriented individuals who are notably troubled when faced with failure. Other research suggests that internals learn the same whether they are in structured or unstructured classes. Research on the interaction of student teacher style of learning and press indicate that students do best when their style of learning is the same as the teacher's press.

The present study was undertaken to investigate the relationship between locus of control orientation and achievement in self-directed study. Self-directed study was defined as student oriented learning with few lectures and the use of contingency points (points earned for work completed) as reinforcement for completing work packets and projects. The null hypothesis was that there is no relationship between progress and locus of control (internality and externality of students) in the self-directed class. The alternate hypothesis was that there is a relationship between the locus of control and students' progress obtained in this type of class setting.

Method

Subjects

The sample consisted of 20 students chosen from a population of 58 students enrolled in a statistics/experimental psychology course (a six hour block required for majors and minors in psychology). Each subject was selected on the basis of his I-E Scale score, which was obtained during the second class meeting; those scoring six and below or 12 and above were selected to participate in the study. The subjects participated in the experiment voluntarily.

Instrument

The I-E Scale (Appendix A) is a 29-item, forced choice measure designed to assess the individual's subjective appraisal of how reinforcement is controlled. The test has been shown to have internal consistency and test-retest reliability (Rotter, 1966). Reliability has been repeatedly shown to be in the range of .69-.79 with several population types, both male and female, separately and mixed. Test-retest reliabilities range from .49 for a two month delay in testing to .83 for a one month delay in testing (Rotter, 1966).

Class Procedure

To complete the course, which is set up on a modified Keller Plan, the student is required to finish 25 units of

study at his own rate. Criteria for completing a unit of study consists of working the exercises in the modules, passing each module test (self-administered), and passing each unit test (administered by proctor or instructor) at the level previously contracted (A=90%, B=85%, and C=80%). A lab is open daily in which students may receive assistance from proctors and/or instructors and take unit tests. Each student is required to meet with the instructor weekly to discuss his progress along with any problem that he may be experiencing. Also, during the weekly meeting, the student's progress is compared with a target line; a line projected by the instructors, based on past experience with students attempting to complete the course (See Figure 1).

Data Analysis

After classifying each student on the variable of internal-external locus of control, each subject's progress was assessed at the tenth week of the 16 week semester. The Median Test (Seigel, 1956) at the .05 level was performed to determine if the two groups significantly differed.

Results and Discussion

The Median Test was used to test the relationship between locus of control and the number of units completed at the tenth week of the course. Results of this test indicated a significant difference between groups, $\chi^2 = 4.08$, $p < .05$, thus the null hypothesis was rejected. This being a directional test, it may be concluded that internals completed significantly more units by the tenth week of this class than did externals (See Table 1). Figure 1 illustrates this difference graphically. Group medians are shown in relation to the target line projected by the instructors for each week of the study.

The results lend support to the findings of Warehime (1972) and Hjelle (1970) that there is a relationship between locus of control and academic performance. Eilerson (1972) concluded that internally controlled students' achievement was significantly greater than externally controlled students in the unstructured class setting. The present study found that those subjects who were internally controlled completed significantly more units of work at the end of the ten week interval than did the externally controlled individuals.

As mentioned previously, studies by Franklin (1963) and Messer (1972) suggested that internally controlled individuals tend to be more motivated to achieve academically than

Table 1 2x2 Table for the Median Test^a

	Internals	Externals
Above median	7	1
Below median	3	7

^aThose subjects scoring at the median were discarded.

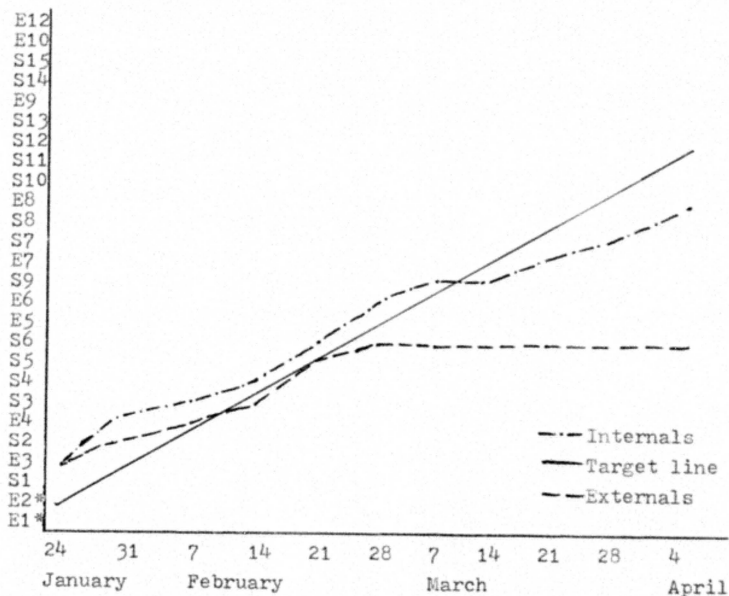


Figure 1 Assessed progress of internals and externals at week intervals.

*E = experimental module

*S = statistical module

externally controlled individuals. The current study supports these findings in that internals' progress continued to increase while externals' progress leveled off (See Figure 1).

Earlier studies by Cardy (1962) and Efram (1963) yielded evidence to suggest that externally controlled students tend to contribute their academic problems to external forces such as fate, luck, or powerful others. The results of this study are in agreement with earlier findings, and suggest that these previous interpretations may be true in that externally controlled individuals experience less need to forget their failures since they have accepted environmental forces as determining their failures.

In further studies dealing with locus of control and academic success, emphasis could be placed upon the following alterations. It appears that a replication of this study in which subjects were selected from a population several times the size of the one used is warranted in order to further substantiate the results found in the present investigation. Another valuable study would deal with the rate at which students drop the course.

It may be profitable for educators to discern academic performance among other academic settings such as the structured class and the unstructured class setting. Furthermore, other personality variables may be investigated in relation to the rate of learning of students in the self-directed class setting. In reference to this particular study

however, it would seem that exploration of matching the particular personality variables dealt with here with various strategies for teaching may provide more information about the teaching-learning process.

References

- Biondo, J. W. & MacDonald, A. F. Internal-external locus of control and response to influence attempts. Journal of Personality, 1971, 39, 407-419.
- Cardi, M. An examination of internal versus external control in relation to academic failures. Unpublished master's thesis, Ohio State University, 1962.
- Cronbach, L. J. Beyond the two disciplines of scientific psychology. American Psychologist, 1975, 30 (2), 116-127.
- Domino, G. Differential prediction of academic achievement in conforming and independent settings. Journal of Educational Psychology, 1968, 59, 256-260.
- Domino, G. Interactive effects of achievement orientation and teaching style on academic achievement. Journal of Educational Psychology, 1971, 62, 427-431.
- Efram, J. S. Some personality determinants of memory for success or failure. Unpublished doctoral dissertation, Ohio State University, 1963.
- Eilersen, H. J. Locus of control and achievement and participation in structured and unstructured introductory psychology courses. (University of Washington, 1972) Dissertation Abstracts International, 1972, 33 (5-A), 2164. (University Microfilms No. 72-28, 593).

- Franklin, R. D. Youth's expectancies about internal versus external control of reinforcement related to N variables. Unpublished doctoral dissertation, Purdue University, 1963.
- Haber, A. & Runyon, F. R. General Statistics, Addison-Wesley Publishing Company, Reading, Massachusetts, 1969.
- Hjelle, L. A. Internal-external control as a determinant of academic achievement. Psychological Reports, 1970, 26, 326.
- Hjelle, L. A. & Clouser, R. Susceptibility to attitude change as a function of internal-external control. Psychological Record, 1970, 20, 305-310.
- James, W. H. & Rotter, J. B. Partial and 100% reinforcement under chance and skill conditions. Journal of Experimental Psychology, 1958, 55, 397-403.
- Jones, S. C. & Shrauger, J. S. Locus of control and interpersonal evaluation. Journal of Consulting and Clinical Psychology, 1968, 32, 664-668.
- Julian, J. W. & Katz, S. B. Internal vs. external control and the value of reinforcement. Journal of Personality and Social Psychology, 1968, 8, 89-94.
- Lefcourt, H. M. Internal versus external control of reinforcement. Psychological Bulletin, 1966, 65, 206-210.
- Messer, S. B. The relation of internal-external control to academic performance, Child Development, 1972, 43(4), 1456-1462.

- Odell, M. Personality correlates of independence and conformity. Unpublished master's thesis, Ohio State University, 1959. Cited in Lefcourt, H. M. Internal versus external control of reinforcement: A review. Psychological Bulletin, 1966, 65, 206-220.
- Phares, E. J. Expectancy changes in skill and chance situations. Journal of Abnormal and Social Psychology, 1957, 54, 339-342.
- Rotter, J. B. & Rafferty, J. E. The Rotter incomplete sentences blank manual. New York: Psychological Corporation, 1950.
- Rotter, J. B. Social learning and clinical psychology. Englewood Cliffs, N. J.: Prentice-Hall, 1954.
- Rotter, J. B. Some implications of a social learning theory for prediction of goal directed behavior from testing procedures. Psychological Review, 1960, 67, 301-316.
- Rotter, J. B. Generalized expectancies for internal versus external control of reinforcement. Psychological Monographs: General and Applied, 1966, 80, (1, Whole No. 609).
- Rotter, J. B., Liverant, S. & Crowne, D. P. The growth and extinction of expectancies in chance controlled and skilled test. Journal of Psychology, 1961, 52, 161-177.
- Ryckman, R. M. & Rodda, W. C. Conformity in college men and women as a function of locus of control and prior group support. Journal of Social Psychology, 1972, 86, 313-314.

- Seigel, S. Nonparametric statistics for the behavioral sciences, New York: McGraw-Hill, 1956.
- Stephens, J. M. The process of schooling, New York: Holt, Rinehart and Winston, 1967.
- Ude, L. K. & Vogler, R. E. Internal vs. external control of reinforcement and awareness in a conditioning task. Journal of Psychology, 1969, 73, 63-67.
- Warehime, R. G. Generalized expectancy for locus of control and academic performance. Psychological Reports, 1972, 30, 314.
- White, K. & Howard, J. L. The relationship of achievement responsibility to instructional treatments. The Journal of experimental Education, 1970, 39, 78-82.

Appendix

Appendix A

Internal-External Control Scale

- *1. a. Children get into trouble because their parents punish them too much.
b. The trouble with most children nowadays is that their parents are too easy with them.
- 2. a. Many of the unhappy things in people's lives are partly due to bad luck.
b. People's misfortunes result from the mistakes they make.
- 3. a. One of the major reasons why we have wars is because people don't take enough interest in politics.
b. There will always be wars, no matter how hard people try to prevent them.
- 4. a. In the long run people get the respect they deserve in this world.
b. Unfortunately, an individual's worth often passes unrecognized no matter how hard he tries.
- 5. a. The idea that teachers are unfair to students is nonsense.
b. Most students don't realize the extent to which their grades are influenced by accidental happenings.

Appendix A-Continued

- 6. a. Without the right breaks one cannot be an effective leader.
 - b. Capable people who fail to become leaders have not taken advantage of their opportunities.
- 7. a. No matter how hard you try some people just don't like you.
 - b. People who can't get others to like them don't understand how to get along with others.
- *8. a. Heredity plays the major role in determining one's personality.
 - b. It is one's experiences in life which determine what they're like.
- 9. a. I have often found that what is going to happen will happen.
 - b. Trusting to fate has never turned out as well for me as making a decision to take a definite course of action.
- 10. a. In the case of the well prepared student there is rarely if ever such a thing as an unfair test.
 - b. Many times exam questions tend to be so unrelated to course work that studying is really useless.
- 11. a. Becoming a success is a matter of hard work, luck has little or nothing to do with it.
 - b. Getting a good job depends mainly on being in the right place at the right time.

Appendix A-Continued

- 12. a. The average citizen can have an influence in government decisions.
 - b. This world is run by the few people in power, and there is not much the little guy can do about it.
- 13. a. When I make plans, I am almost certain that I can make them work.
 - b. It is not always wise to plan too far ahead because many things turn out to be a matter of good or bad fortune anyhow.
- *14. a. There are certain people who are just no good.
 - b. There is some good in everybody.
- 15. a. In my case getting what I want has little or nothing to do with luck.
 - b. Many times we might just as well decide what to do by flipping a coin.
- 16. a. Who gets to be the boss often depends on who was lucky enough to be in the right place first.
 - b. Getting people to do the right thing depends upon ability, luck has little or nothing to do with it.
- 17. a. As far as world affairs are concerned, most of us are the victims of forces we can neither understand, nor control.
 - b. By taking an active part in political and social affairs the people can control world events.

Appendix A-Continued

- 18. a. Most people don't realize the extent to which their lives are controlled by accidental happenings.
 - b. There really is no such thing as "luck."
- 19. a. One should always be willing to admit mistakes
 - b. It is usually best to cover up one's mistakes.
- 20. a. It is hard to know whether or not a person really likes you.
 - b. How many friends you have depends upon how nice a person you are.
- 21. a. In the long run the bad things that happen to us are balanced by the good ones.
 - b. Most misfortunes are the result of lack of ability, ignorance, laziness, or all three.
- 22. a. With enough effort we can wipe out political corruption.
 - b. It is difficult for people to have much control over the things politicians do in office.
- 23. a. Sometimes I can't understand how teachers arrive at the grades they give.
 - b. There is a direct connection between how hard I study and the grades I get.
- *24. a. A good leader expects people to decide for themselves what they should do.
 - b. A good leader makes it clear to everybody what their jobs are.

Appendix A-Continued

25. a. Many times I feel that I have little influence over things that happen to me.
- b. It is impossible for me to believe that chance or luck plays an important role in my life.
26. a. People are lonely because they don't try to be friendly.
- b. There's not much use in trying too hard to please people, if they like you, they like you.
- *27. a. There is too much emphasis on athletics in high school.
- b. Team sports are an excellent way to build character.
28. a. What happens to me is my doing.
- b. Sometimes I feel that I don't have enough control over the direction my life is taking.
29. a. Most of the time I can't understand why politicians behave the way they do.
- b. In the long run the people are responsible for bad government on a national as well as on a local level.

Note-Underlined items are the external items.

Score is total number of external items.

*-Filler items.